(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 17 June 2004 (17.06.2004)

PCT

(10) International Publication Number WO 2004/050858 A3

- (51) International Patent Classification?: C12Q 1/68, C12P 21/02, C12N 15/00, 15/12, 15/11, A61K 31/7088, 31/711
- (21) International Application Number:

PCT/US2003/038808

- (22) International Filing Date: 4 December 2003 (04.12.2003)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/431,133

4 December 2002 (04.12.2002) US

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- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 18 November 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



858050/

(54) Title: COMPOSITIONS, SPLICE VARIANTS AND METHODS RELATING TO COLON SPECIFIC GENES AND PROTEINS

(57) Abstract: The present invention relates to newly identified nucleic acid molecules and polypeptides present in normal and neoplastic colon cells, including fragments, variants and derivatives of the nucleic acids and polypeptides. The present invention also relates to antibodies to the polypeptides of the invention, as well as agonists and antagonists of the polypeptides of the invention. The invention also relates to compositions containing the nucleic acid molecules, polypeptides, antibodies, agonists and antagonists of the invention and methods for the use of these compositions. These uses include identifying, diagnosing, monitoring, staging, imaging and treating colon cancer and non-cancerous disease states in colon, identifying colon tissue, monitoring and identifying and/or designing agonists and antagonists of polypeptides of the invention. The uses also include gene therapy, production of transgenic animals and cells, and production of engineered colon tissue for treatment and research.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/38808

A. CLASSIFICATION OF SUBJECT MATTER						
IPC(7) : C12Q 1/68; C12P 21/02; C12N 15/00, 15/12, 15/11; A61K 31/7088, 31/711						
	US CL : 536/23.1, 23.5; 435/6, 320.1, 325, 252.3, 69.1; 514/44 According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols)						
	36/23.1, 23.5; 435/6, 320.1, 325, 252.3, 69.1; 514/4		į			
0.5 5.	50,25.1, 25.5, 455.6, 526.1, 526, 252.6, 55.1, 51					
Documentation	on searched other than minimum documentation to the	e extent that such documents are included	in the fields searched			
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Electronic da	ta base consulted during the international search (nan	ne of data base and, where practicable, so	earch terms used)			
	SEQ ID NOs: 1 and 95					
C. DOC	UMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.			
X	WO 95/15084 A1 (LXR BIOTECHNOLOGY INC.)		1-6 and 8-10			
	especially Claim 4, Figures 3A-3C, and pages 3 and	15-9, compare SEQ ID NO: 1,				
	nucleotides 212-830 to Figure 3A-3C, nucleotides 1	03-721.				
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Burthe	r documents are listed in the continuation of Box C.	See patent family annex.				
	pecial categories of cited documents:	"T" later document published after the inte	mational filing date or priority			
	•	date and not in conflict with the applic	cation but cited to understand the			
	t defining the general state of the art which is not considered to be ular relevance	principle or theory underlying the inve				
_		"X" document of particular relevance; the considered novel or cannot be conside	claimed invention cannot be			
"B" earlier a	oplication or patent published on or after the international filing date	when the document is taken alone	led to mydre an mydnayc step			
	t which may throw doubts on priority claim(s) or which is cited to the publication date of another citation or other special reason (as	"Y" document of particular relevance; the	claimed invention cannot be			
- specified		considered to involve an inventive step	when the document is			
"O" documen	t referring to an oral disclosure, use, exhibition or other means	combined with one or more other such being obvious to a person skilled in th				
		"&" document member of the same patent	family			
"P" document published prior to the international filing date but later than the "&" document member of the same patent family priority date claimed						
Date of the actual completion of the international search Date of mailing of the international search report			rch report			
Date of the actual completion of the international sourch						
20 August 2004 (20.08.2004)		07 SEP 2004				
Name and mailing address of the ISA/US		Authorized officer				
Mail Stop PCT, Attn: ISA/US Commissioner for Patents		James Martinell 7. Roberts for				
P.O. Box 1450		Telephone No. (571) 272-1600				
Alexandria, Virginia 22313-1450 Telephone No. (371) 272-1000			•			
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Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

application No.

PCT/US03/38808

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Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)			
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:			
1.		Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:	
2.		Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:	
3.	6.4(a).	Claim Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule	
Box	II O	servations where unity of invention is lacking (Continuation of Item 2 of first sheet)	
		tional Searching Authority found multiple inventions in this international application, as follows: Continuation Sheet	
1. 2. 3.		As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:	
4.	\boxtimes	No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-10 and 15-17 as they pertain to nucleic acids encoding SEQ ID NO: 95.	
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	PCT/US03/38808				
INTERNATIONAL SEARCH REPORT					
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BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING					
This application contains the following inventions or groups of inventions which are not so linked as to form a single general					
inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must					
be paid.					
Group I, claim(s) 1-10, and 15-17 drawn to nucleic acids, nucleic acid molecular hybridization assays, vectors, host cells, methods					
for producing polypeptides, kits, vaccines, and methods of treatment using nuclei	for producing polypeptides, kits, vaccines, and methods of treatment using nucleic acids.				
a transfer to the total and the polymentides bits vessions and	methods of treatment using polyneptides.				
Group II, claim(s) 11, 12, and 16-18, drawn to polypeptides, kits, vaccines, and methods of treatment using polypeptides.					
Group III, claim(s) 13-15, drawn to antibodies and protein binding assays.					
TANK In the state of the state	propert under PCT Dule 13.1 because under PCT				
The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The nucleic acids, vectors, host					
l calle muclaic acid containing kits, and nucleic acid vaccines of Group I are mate	rially different from the polypeptides, kits containing				
had montides, and palymentide vaccines of Group II, and the antibodies of Group	III. The methods of Group I may be practiced				
without the products or compositions of Group II or the antibodies of Group III. The methods of Groups I-III may be practiced					
independently of one another. The polypeptides and vaccines of Group II are materially different from the antibodies of Group III and are not needed to practice the methods of Group III. Each of the Groups mentions or requires the use of 248 separate and unrelated					
nucleic acids and/or polypeptides; thus the total number of inventions is 3 x 248	= 744.				
•					
Each of the Groups mentions or requires the use of a large number of separate at matter which additional Group(s) applicant elects, applicant is further required to	nd unrelated nucleic acids and/or porypeptides. The				
Grown(s) for search Any additional SEO ID NO to be searched requires one ad	ditional search fee per SEQ ID NO. In the absence of				
payment of additional search fee(s) the first mentioned SEO ID NO in Group I (i	i.e. SEQ ID NO: 95) will be searched. Should				
applicant pay fee(s) for additional Groups to be searched, the first mentioned SE	Q ID NO within the selected Group will be searched				
unless applicant directs otherwise.					
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